

EUROPEAN PATENT OFFICE

Patent Abstracts of Japan

PUBLICATION NUMBER : 03170307
PUBLICATION DATE : 23-07-91

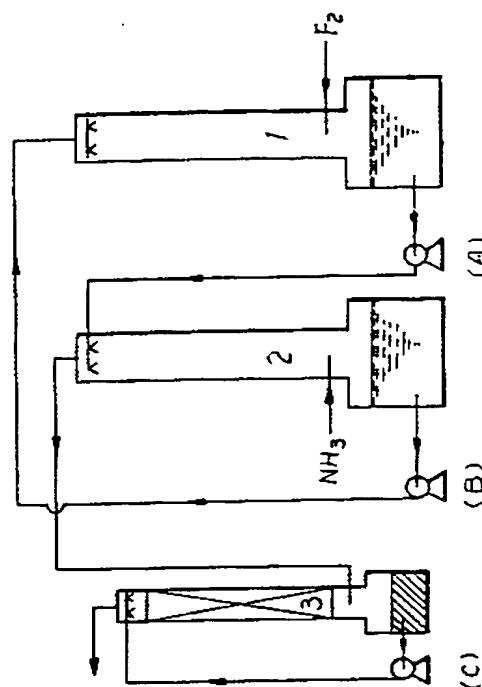
APPLICATION DATE : 27-11-89
APPLICATION NUMBER : 01307243

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INT.CL. : C01B 21/083

TITLE : PRODUCTION OF NITROGEN
TRIFLUORIDE



ABSTRACT : **PURPOSE:** To improve the production efficiency of nitrogen trifluoride by introducing F gas after dissolving NH₃ into a perfluorocarbon liquid or by introducing NH₃ gas after dissolving F gas into a perfluorocarbon liquid.

CONSTITUTION: A 6-14C linear or cyclic perfluorocarbon which is liquid at normal temperature (e.g. perfluorohexane) is supplied to the top of an F- dissolution column 1 at a prescribed flow rate with a pump (B). At the same time, F gas is supplied to the column 1 from the bottom at a prescribed flow rate to accumulate the perfluorocarbon liquid containing dissolved F gas at the column bottom. NH₃ gas is introduced to the bottom of a reaction column 2 at a prescribed flow rate while supplying the accumulated perfluorocarbon liquid to the top of the column 2 with a pump (A). When perfluorocarbon liquid containing little dissolved F gas is accumulated in a liquid reservoir of the reaction column 2, the liquid is supplied to the F-dissolution column 1 with the pump (B) to dissolve F gas again in the liquid. In the course of the above circulating process, NH₃, HF, N₂ and unreacted NH₃ are distilled out from the top of the reaction column 2 and supplied to a scrubbing column 3 containing 10% KOH aqueous solution circulating in the column. HF and unreacted NH₃ can be removed by this process to obtain objective NF₃.

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